

REMARKS AND DISCUSSION

As a preliminary matter, applicant thanks Examiner Burch for the courtesy and consideration shown during the telephone interview of March 6, 2012. During the interview, applicant's representative discussed the pending claims, the art of record and the Office Action with the Examiner. Applicant respectfully submits that the interview was helpful and productive in advancing the prosecution of the application, and that important differences between the invention and the cited references were highlighted during the interview. It is further believed that agreement was reached during the interview that the present amendment appears to overcome the rejection of record, pending further search and consideration.

Upon entry of the present Amendment, claims 1 and 3-7 are pending in the application, of which claim 1 is independent. Claims 1 and 3-7 have been amended herein. The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment is submitted. It is contended that by the present amendment, all bases of rejection set forth in the Office Action have been traversed and overcome. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Amendments Presented

Claim 1 has been amended herein to include selected subject matter from claim 3, to remove objected-to language regarding the relative diameters of the spheres and the guide grooves, and to add additional detail regarding the structure and operation of the lock mechanism.

Applicant also respectfully submits that the present amendments do not introduce any impermissible "new matter" into the application, as all of the subject matter of these amendments was expressly or inherently disclosed in the specification, claims and drawings as originally filed.

Drawing Objection

On page 2 of the Office Action, the Examiner objected to the drawings under 37 CFR 1.83(a), as failing to show every feature of the invention specified in the claims. The Examiner took the position that in her view, the limitation that the guide grooves have a concavely curved cross sectional shape with a diameter that is equal to or larger than the diameter of the spheres must be shown, or the feature canceled from the claims. The Examiner maintained that the Figures and paragraph [0084] of the specification disagreed with the above claim limitation.

Applicant's Response

Applicant respectfully traverses the above ground of rejection and requests reconsideration and withdrawal of such rejection, based on the present amendments and arguments.

Applicant disagrees with the Examiner's objection to the drawings. However, in the interest of expediting prosecution, applicant has amended claim 1 herein to specify that the guide grooves have a concavely curved cross-sectional shape and are configured and arranged such that part of each sphere is rollably fitted into a respective one of the guide grooves.

Applicant respectfully suggests that this amendment to claim 1 overcomes the Examiner's objection to the drawings, and accordingly, requests reconsideration and withdrawal thereof.

Claim Objections

On page 3 of the Office Action, the Examiner objected to claims 5-6 due to a spelling error. The Examiner pointed out that the spelling of the word "lest" should be changed to --least-- for grammatical purposes.

Applicant's Response

Applicant has amended claim 5 herein to correct the spelling of the word "least" as suggested by the Examiner. Accordingly, applicant requests reconsideration and withdrawal of the above ground of objection.

Section 112 Issues

Also on page 3 of the Office Action, the Examiner rejected claims 1 and 3-7 under 35 USC 112, second paragraph, as indefinite.

Regarding claim 1, the Examiner took the position that in her view, the limitation that the guide grooves have a concavely curved cross sectional shape with a diameter that is equal to or larger than the diameter of the spheres was indefinite in light of the disclosure.

Regarding claim 3, the Examiner took the position that in her view, the phrase “a forward movement” near the end of the claim is indefinite, as it is unclear whether the applicant intended to refer back to the previously recited forward movement or not.

Regarding claim 7, the Examiner took the position that in her view, the phrase “a tapered, forward-facing restricting step” is indefinite because in the view of the Examiner, it is unclear whether the step recited in claim 7 was intended to be the same or different from the step recited in claim 1.

Applicant's Response

Applicant respectfully traverses the above ground of rejection and requests reconsideration and withdrawal of such rejection, based on the present amendments and arguments.

The second paragraph of 35 U.S.C. §112 reads as follows:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Additional guidance on this point can be found in the Manual of Patent Examining Procedure. MPEP 2173.02 states, on the subject of the standard under the second paragraph of section 112:

The essential inquiry pertaining to this requirement is whether the claims set out and circumscribe a particular subject matter with a reasonable degree of clarity and particularity. Definiteness of claim language must be analyzed, not in a vacuum, but in light of:

- (A) The content of the particular application disclosure;
- (B) The teachings of the prior art; and
- (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made.

In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph. See, e.g., *Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000).

In addition, applicant has made several amendments to the claims in an effort to more particularly point out and distinctly claim the invention. Applicant has amended claim 1 herein to specify that the guide grooves have a concavely curved cross-sectional shape and are configured and arranged so that part of each sphere is rollably fitted into a respective one of the guide grooves. Regarding claim 3, applicant has amended the claim to simply refer to “forward movement of the piston”. Regarding claim 7, applicant has amended the claim to make it clear that the referenced restricting step is the same as the restricting step claimed in claim 1.

Applicant respectfully suggests that as presently amended, all of the claims are in full compliance with all of the requirements of 35 USC 112.

For all of the foregoing reasons, applicant requests reconsideration and withdrawal of all of the above rejections under 35 USC 112, and allowance of all pending claims.

Section 103 Issues

In item 6 on page 4 of the Office Action, the Examiner rejected claims 1, 3-4 and 7 under 35 USC 103(a) as unpatentable over JP-57190903 (JP ‘903) in view of Reinecke (US 4,116,307) and Rodriguez, US 3,498,188. The Examiner maintained that in her view, the claimed invention would have been obvious in light of the combined teachings of the references.

In item 7 on page 7 of the Office Action, the Examiner rejected claim 5 under 35 USC 103(a) as unpatentable over JP ‘903 in view of Reinecke and Rodriguez, and further in view of Yamamoto, US 3,944,027. The Examiner maintained that in her view, the claimed invention would have been obvious in light of the combined teachings of the references.

Applicant’s Response

Applicant respectfully traverses the above ground of rejection and requests reconsideration and withdrawal of such rejection, based on the present amendments and arguments.

The Standard for Rejection under 35 USC 103

In order to determine obviousness as a legal matter, four factual inquiries must be made concerning: 1) the scope and content of the prior art; 2) the level of ordinary skill in the art; 3) the differences between the claimed invention and the prior art; and 4) secondary considerations of nonobviousness, which in case law is often said to include commercial success, long-felt but unresolved need, failure of others, copying, and unexpected results. *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459, 467 (US 1966); *Miles Labs v. Shandon*, 997 F.2d 870, 27 USPQ2d 1123, (Fed. Cir. 1993).

The U.S. Supreme Court has recently said that “[A] patent composed of several elements is not proved obvious merely by demonstrating that each element was, independently, known in the prior art. . . . Inventions usually rely upon building blocks long since uncovered, and claimed

discoveries almost necessarily will be combinations of what, in some sense, is already known. **KSR v. Teleflex**, 127 S. Ct. 1727, 82 USPQ2d 1385 (S.Ct.2007).

In view of the recent Supreme Court decision in **KSR v. Teleflex**, *supra*, the Patent Office has published examination guidelines for determining obviousness under 35 U.S.C. 103 (see Federal Register V. 72, No. 195, October 10, 2007). Applicant respectfully suggests that under the Patent Office guidelines, the Examiner must provide a convincing reason why he or she feels that it would be obvious to combine the elements of the cited references in the fashion claimed by applicant. “Rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.” (*In re Kahn*, 441 F. 3d 977, 988 (CA Fed. 2006) cited with approval in **KSR v. Teleflex**, *supra*.)

The U.S. Supreme Court has also stated that a factfinder should be aware of the distortion caused by hindsight bias and must be cautious of arguments reliant upon ex post reasoning. See **Graham**, 383 U. S., at 36 (warning against a “temptation to read into the prior art the teachings of the invention in issue” and instructing courts to “guard against slipping into the use of hindsight”. **KSR v. Teleflex**, *supra*.)

MPEP 2141.02 states that “ascertaining the differences between the prior art and the claims at issue requires interpreting the claim language, and considering both the invention and the [respective] prior art references as a whole A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention.” See **W.L. Gore & Associates, Inc. v. Garlock, Inc.**, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill the art, including nonpreferred embodiments. **Merck & Co. v. Biocraft Laboratories**, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989).

Applicant respectfully submits that the Examiner has not provided a convincing or persuasive reason why it would be appropriate to combine the references in the manner suggested by the Examiner, and respectfully points out that even if the references are hypothetically combined, for the sake of argument, the combination fails to produce applicant's invention as currently claimed.

Applicant respectfully submits that the differences between the claimed invention and the cited references are substantial and significant, and therefore, applicant's invention is non-obvious as compared to the respective teachings of the references, whether such references are considered individually or in any reasonable combination.

In addition, as noted above, applicant has amended claim 1 herein to include selected subject matter from claim 3, to remove objected-to language regarding the relative diameters of the spheres and the guide grooves, and to add additional detail regarding the structure and operation of the lock mechanism.

Contrast between Applicant's invention and JP-57190903

The following numbers in parentheses, used in the present discussion, refer to reference numbers in applicant's specification, and are used for purposes of illustration rather than limitation. The scope of applicant's invention is defined by the claims rather than by the following discussion.

Applicant's amended claim 1 includes the following features:

1. A parking control fluid pressure chamber is formed between the casing and the parking piston for making a parking control fluid pressure act on a rear face of the parking piston, and a parking release control fluid pressure chamber is formed between the casing and the lock piston for enabling a parking release control fluid pressure to act on the lock piston toward the rear.
2. The insertion shaft comprises a small diameter shaft portion on a front side thereof, a tapered portion formed continuously with the small diameter portion, and a large diameter shaft

portion formed continuously with the small diameter shaft portion via the tapered portion, the respective spheres being selectively positionable on any one of the small diameter shaft portion, the tapered portion and the large diameter shaft portion, depending on the position of the parking piston;

3. The fluid pressure controller operates to control a supply of fluid pressure to the parking control fluid pressure chamber and the parking release control fluid pressure chamber and release of residual pressure of the parking control fluid pressure chamber and the parking release control fluid pressure chamber such that, when obtaining a parking brake state, the parking piston is moved forward and thereafter the lock piston is moved forward, whereas when the parking brake state is released, the lock piston is moved rearward and thereafter the parking piston is moved rearward; and
4. The restricting step of the insertion shaft is tapered.

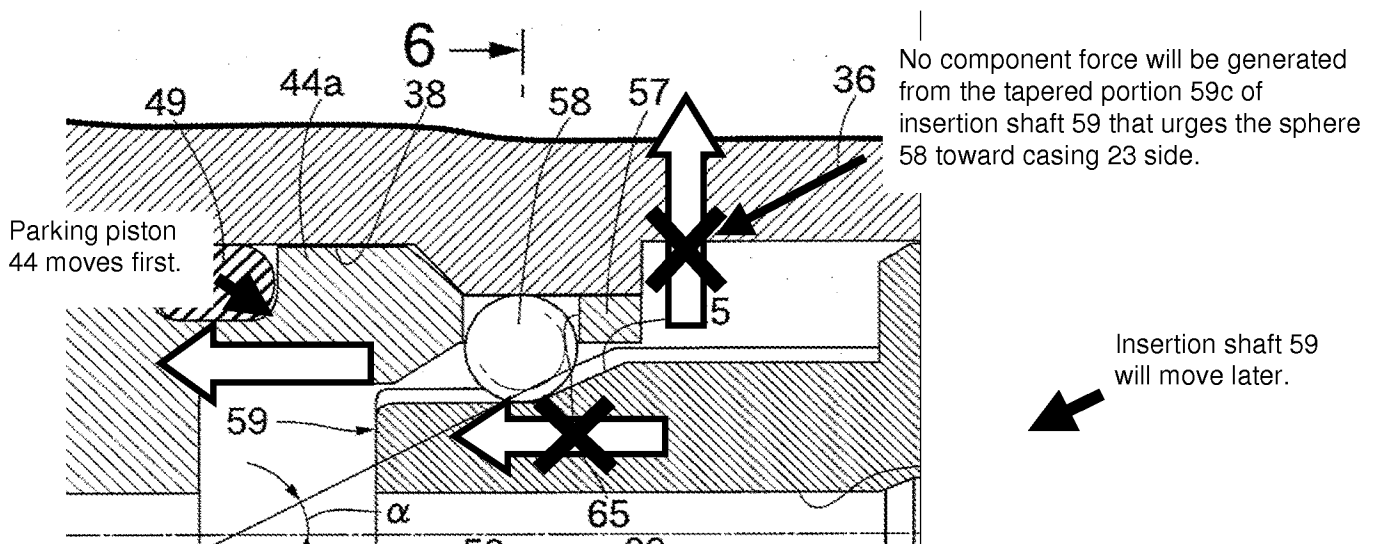
The above feature (1) is supported by the disclosures of the original text at paragraph [0048] on page 17 and paragraph [0057] on page 20. The feature (2) is found at paragraph [0062] on page 21. The feature (3) is found at paragraphs [0069] to [0073] on pages 23-25. The feature (4) is found at paragraph [0046] on page 16. Specifically, for the operation at the time of obtaining a parking brake state of the feature (3), see paragraph [0069]. Regarding the operation at the time of release of the parking brake state, see paragraph [0073].

Owing to the additional features in applicant's amendment to claim 1, when obtaining a parking brake state, it is arranged that the parking piston (44) is moved forward and subsequently, the lock piston (56) is moved forward. With this arrangement, the parking piston and lock piston can be slid smoothly. That is, without this arrangement, such inconvenience will occur that in a state where the spheres (58) are clamped between the parking piston (44) and the tapered portion (59c) of the

insertion shaft (59), the spheres (58) receive force from the insertion shaft (59), which is moving forward, so that a component force of the forwardly moving force acts on the spheres (58) to urge them toward the casing (23), making a smooth slide movement of the parking piston (44) and tapered portion (59c) difficult.

See the following reference view 1, showing how the applicant's claimed structure will operate in this regard, which is prepared using a modified version of applicant's Fig. 5.

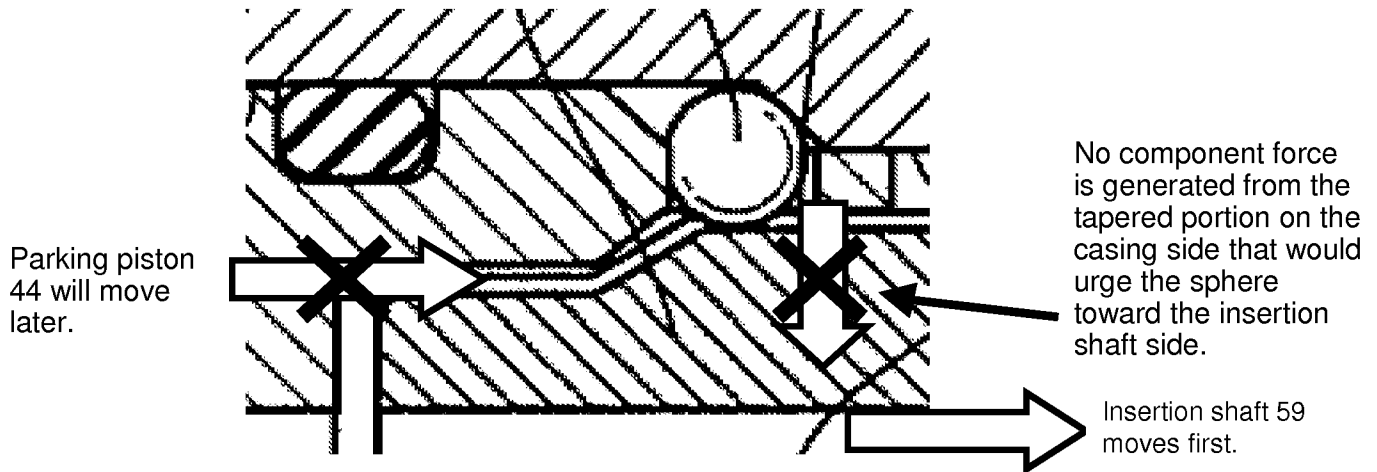
REFERENCE VIEW 1- (Applicant's Parking Brake System)



Owing to the arrangement claimed in applicant's amended claim 1, when releasing the parking brake state, as shown in the following reference view 2 as prepared using a modified version of Fig. 7 of the application, the lock piston (56) moves rearward and subsequently, the parking piston (44) moves rearwardly.

This arrangement serves to avoid such inconvenience that the force generated by the rearward movement of the parking piston (44) urges the spheres (58) against the tapered restricting step (42) on the casing (23) side, whereby a component force caused by such urging acts on the spheres to be pushed toward the lock piston (56) side, making the movement of the lock piston (56) difficult.

REFERENCE VIEW 2- (Applicant's Parking Brake System)



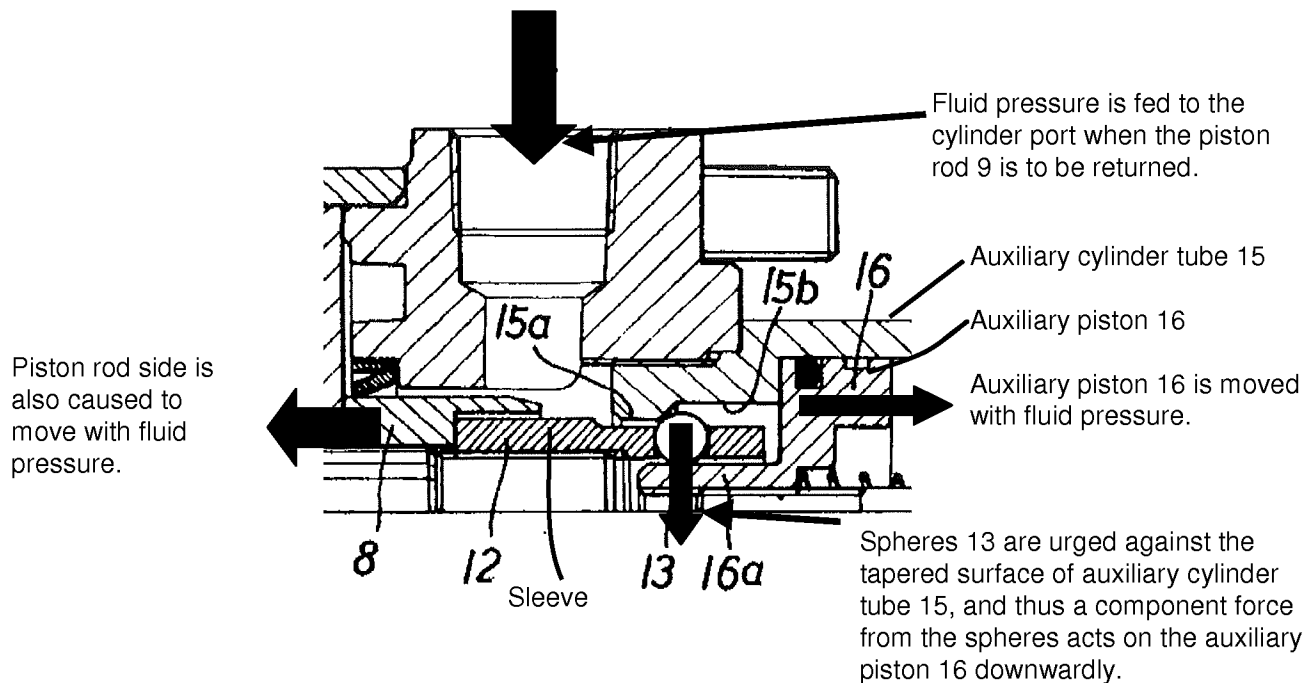
As will be apparent from the above, the arrangement according to the amended claim 1 contributes to avoiding inconveniences that at the time of obtaining a parking brake state or of releasing such brake state, the spheres undesirably obstruct the movement of the parking piston or insertion shaft. The arrangement according to applicant's amended claim 1 enables smooth movements of these members.

On the other hand, the cited reference JP 57-190903 relates to a fluid pressure cylinder device equipped with a lock device for a piston. When the piston rod 9 is moved for assuming its lock state, the spheres 13 on the sleeve 12 which is integrally movable with the piston rod 9 are put into contact with the auxiliary piston 16. In order to obtain a locked state, it is required to displace the auxiliary piston 16, which is in contact with the spheres 13, against the force of spring 22. This structure obstructs a smooth movement of the sleeve 12. Please see Fig. 2 of this reference.

Moreover, when a locked state of the piston rod 9 is to be released, the fluid pressure is fed to the cylinder port 3a, thus the fluid pressure being applied to both of the piston rod 9 side and auxiliary piston 16 side. In this case, the spheres 13 receive a force acting in the returning direction of piston rod 9, i.e., in the opposite direction until the auxiliary piston 16 comes off from the sleeve 12 so that in

that state, the spheres are urged against the tapered surface of the auxiliary cylinder tube 15. This causes the spheres to exhibit a force urging the auxiliary piston 16 downwardly in the figures so that the auxiliary piston 16 is difficult to move. See the following reference view 3, which is prepared using a modified version of Fig. 3 of the reference, JP 57-190903.

REFERENCE VIEW 3- (JP 57-190903)



Concerning the differences between the invention defined in applicant's amended claim 1 and the prior art known from JP 57-190903, when referring to their embodiments, in JP 57-190903, for locking of the piston rod 9, the movement of sleeve 12 places the spheres 13 in contact with the projecting portion 15a of auxiliary cylinder tube 15 thereby to hold the auxiliary piston 16 in place, whereas in the present invention, the spheres 58 are not pushed radially inwardly when moving from the inoperative state of Fig. 4 to the locked position of Figs. 7 and 8. The guide hole 39 does not act on the associated sphere 58 so as to force the sphere downwardly or radially inwardly. Accordingly, the lock piston 56 is not pushed by the spheres 58 so that the piston can perform slide movement.

US 4,116,307 (Reinecke) merely shows a device for operating a disc brake which includes an

arrangement for effecting parking brake. However, this citation totally fails to teach or suggest the idea of the present invention of eliminating an obstruction to the smooth slide movement of a piston by controlling the order of operating a parking piston and a lock piston by controlling supply of a fluid pressure to a parking control fluid pressure chamber and a parking release control fluid pressure chamber and release of residual pressure of the parking control fluid pressure chamber and the parking release control fluid pressure chamber.

US 3,498,188 (Rodriguez) merely shows a piston rod having a groove of arcuate cross section formed thereon for receiving a ball member.

US 3,944,027 (Yamamoto), which is cited to reject claim 5 on file in combination with the other references, has nothing to do with the idea of the present invention operating sequentially.

Applicant respectfully suggests that the combination of the cited references, even when Yamamoto is added to the other three citations, fails to show all of the features of applicant's amended claim 1. Therefore, the invention defined in the amended claim 1 is not obvious from such combination.

Based on the foregoing, applicant respectfully submits that each of the Examiner's rejections of claims 1, 3-5 and 7 as unpatentable over the art of record has been overcome. As such, it is respectfully requested that such rejection be reconsidered and withdrawn.

Double Patenting Issues

In item 9 on page 9 of the Office Action, the Examiner has rejected claim 1 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent Number 7,651,175 to Inagaki in view of JP '903. It is the Examiner's position that

it would have been obvious to modify the parking brake system of the Inagaki patent to include a spring, as taught by JP '903. in order to provide a means of urging the lock piston forwardly in the casing to facilitate reaching the locked position.

Applicant's Response

As noted above, Claim 1 has been amended herein to include selected subject matter from claim 3, to remove objected-to language regarding the relative diameters of the spheres and the guide grooves, and to add additional detail regarding the structure and operation of the lock mechanism. Applicant respectfully submits that the present amendments to claim 1 patentably distinguish the claimed invention from the respective disclosures of Inagaki and JP '903, whether these references are considered individually or in combination.

Based on the foregoing, applicant respectfully submits that the Examiner's double patenting rejection of claim 1 as unpatentable over Inagaki and JP '903 on the ground of double patenting has been overcome. As such, it is respectfully requested that such rejection be reconsidered and withdrawn.

Allowable Subject Matter

In item 10 on page 10 of the Office Action, the Examiner objected to claim 6 as being dependent on a rejected base claim, but indicated that this claim would be allowable if the rejection under section 112 were overcome, and if the claim were rewritten in independent form, including all of the limitations of the base claims and any intervening claims.

Applicant's Response

Applicant thanks the Examiner for recognizing allowable subject matter in claim 6.

Conclusion

For all of the foregoing reasons, applicant respectfully submits that all of the objections and rejections set forth in the Office Action are overcome, and that as presently presented, all of the pending claims are believed to be allowable over all of the references of record, whether considered singly or in combination. The applicant requests reconsideration and withdrawal of the rejections of record, and allowance of the pending claims.

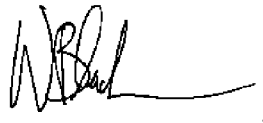
The application is now believed to be in condition of allowance, and a notice to this effect is earnestly solicited.

If the Examiner is not fully convinced of the patentability of all of the claims now in the application, the applicant respectfully requests that the Examiner telephonically contact the applicant's undersigned representative to expeditiously resolve any issues remaining in the prosecution of the application.

Favorable consideration is respectfully requested.

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